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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,116	12/26/2001	Andrew J. Beaumont-Smith	1662-52700 JMH (P01-3816)	3409
23505	7590	10/12/2004	EXAMINER MAI, TAN V	
CONLEY ROSE, P.C. P. O. BOX 3267 HOUSTON, TX 77253-3267			ART UNIT 2124	PAPER NUMBER

DATE MAILED: 10/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,116

Applicant(s)

BEAUMONT-SMITH ET AL.

Examiner

Tan V Mai

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-26 and 28-32 is/are allowed.
- 6) ☒ Claim(s) 1-3, 9-17 and 27 is/are rejected.
- 7) ☒ Claim(s) 4-8 and 18-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/3/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

2. The disclosure is objected to because of the following informalities:

Page 2, TABLE 1; the equation " $E_r = E_a - \underline{E_b} + \underline{E_b} + E_{bias}$ " seems to be incorrect;

The terms "compliment" (e.g., see page 14, line 5 from the bottom and claim 11) are misspelled.

Appropriate correction is required.

3. Claims 2, 3, 9-16 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 2, 3 and 27, the period "." at the ends are missing.

As per claim 9, the terms "**at least one ... at least one ... to carry-propagate form ... to carry-propagate form**" (lines 9-12) are indefinite. If "at least one" is **ONE**, then the "second adder logic" could NOT have "carry-propagate form".

As per claim 10, "claim 7" should be --claim 9--.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 9 and 17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sharangpani et al.

As per independent claim 1, Sharangpani et al teach, e.g., see Figs. 2-3, a quotient prediction circuit which is used to predict a next quotient for radix 4 SRT division. The circuit has a Carry propagate adder, CPA, (210) for receiving a **truncated portion of redundant partial remainder** from partial remainder generator (300). CPA 210 assembles the *sum portion* 365 and *carry portion* 369 of the truncated partial remainder into composite partial remainder 212. PLA 230 generates next quotient 235 which along with next quotient sign 225. Therefore, Sharangpani et al do teach the claimed "carry-save form", "carry-propagate form [of a **plurality of most significant bits**]" and "assigning a next quotient digit".

Due to the similarity of claims 9 and 17 to claim 1, they are rejected under a similar rationale.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rault in view of Sharangpani et al.

Sharangpani et al have been discussed in paragraph 5 above.

As per claim 3, the claim adds "table based on the radix of divider algorithm". The feature is obvious to a person having ordinary skill in the art because the "number of bits" is merely the number bits of a radix. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Sharangpani et al 's teachings because the device is a quotient prediction circuit which is used to predict a next quotient as claimed.

8. Claims 2, 4-8, 10-16, 18-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references are art of interest.

10. The following is an examiner's statement of reasons for allowance: the recorded references do NOT teach or suggest the detail feature as recited in dependent claims 2, 4-8, 10-16, 18-23 and independent claims 24 and 28.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (703) 305-9761. The examiner can normally be reached on Tue-Fri from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned are:

Official (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



TAN V. MAI
PRIMARY EXAMINER